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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,851

10/06/2006

Osamu Takahashi

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EXAMINER

MULLINS, BURTON S

ART UNIT

PAPER NUMBER

2834

MAIL DATE

DELIVERY MODE

11/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,851	Applicant(s) TAKAHASHI ET AL.	
	Examiner BURTON MULLINS	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 3-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/06</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species (i) in the reply filed on 07 October 2008 is acknowledged.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 29 March 2006 has been considered by the examiner.

Drawings

4. Figures 8A-8B & 9A-9B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities: Reference to specific claims (pp.3-6) should be removed from the specification. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, recitation “a u-phase coil winding unit, a v-phase coil winding unit and a w-phase coil winding unit radially extending from a stator fixed to a rotating shaft” is indefinite and contradictory. The “stator” of a motor is by definition fixed, i.e., immovable (in contrast to the rotating rotor), and therefore “a stator fixed to a rotating shaft” is indefinite and contradictory. The phrase will be interpreted as referring to a fixed stator and a rotatable rotor.

Claim Rejections - 35 USC § 102/103

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 1, as best understood, is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takehara (US 5,394,045). Takehara, in his discussion of the prior art c.1:39-42, teaches an electromagnetic motor adopting a delta-connection structure (Figs.16-18) which includes an u-phase coil winding unit 5, a v-phase coil winding unit 5 and a w-phase coil winding unit 5 radially extending from “a stator fixed to a rotating shaft” [sic] (armature 4 fixed, rotor magnet 3 rotates, Fig.12) and set with a phase difference relative to one another (i.e., phases p,q,r, Figs.16-17) and a first feeding terminal p, a second feeding terminal q and a third feeding terminal r (Figs.16-17) through which a predetermined current is supplied to coils at the individual phases (inherent), wherein said coils 5 are wound at least twice over through a sequence (i.e., double layer winding, Figs.17-18, c.1:39-42) so as to form at least two coil layers at each coil winding unit 5 among said u/p-phase coil winding unit, said v/q-phase coil winding unit and said w/r-phase coil winding unit (Figs.17-18).

Takehara’s prior art differs in that there is no teaching of the particular winding sequence: said first feeding terminal → u-phase coil winding unit → said second feeding terminal → v-phase coil winding unit → said third feeding terminal → said w-phase coil winding unit.

The claimed “winding sequence”, however, is a simply method of manufacture limitation. Since the claim is an apparatus claim, the claim is a product-by-process claim. Product-by-process claims are not limited to the manipulations of the recited steps (in this case, the steps of the “winding sequence”, i.e., winding of the “first feeding terminal → u-phase coil winding unit → said second feeding terminal → v-phase coil winding unit → said third feeding terminal → said w-phase coil winding unit”), only the structure implied by the steps. “[E]ven

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though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). See MPEP 2113.

The product of Takehara’s prior art is the same as that of the product-by-process claim since Takehara’s prior art comprises two sets of three-phase windings (Fig.17) which are wound in a double layer (Fig.18). Further, as seen in Fig.17, each layer includes connections to the p-, q-, and r-feeding terminals. While the particular method of winding is not claimed (i.e., whether the p-phase is wound first or last, for instance, and whether it connects first to the p- or to the q-feeding terminal), the end product is the same.

A 102/103 rejection is appropriate in this instance since it has been held that “[T]he lack of physical description in a product-by-process claim makes determination of the patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not of the recited process steps which must be established. We are therefore of the opinion that when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it

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and then obtain prior art products and make physical comparisons therewith.” *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

Claim Rejections - 35 USC § 103

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takehara.

Takehara’s prior art (Figs.16-18; c.1:31-42) teaches the claimed invention including a multi-phase, delta-connected motor with two-layer windings. Takehara’s prior art does not teach the coil arrangement given by the winding sequence of claim 2: “said first feeding terminal → a first u-phase coil winding unit → a second u-phase coil winding unit → said second feeding terminal → a first v-phase coil winding unit → said second v-phase coil winding unit → said third feeding terminal → a first w-phase coil winding unit → said second w-phase coil winding unit.” In other words, Takehara’s prior art does not teach that each phase comprises two series-connected windings.

However, in Fig.4, Takehara teaches two-layer (overlapped) windings connected by a winding sequence of “said first feeding terminal p → a first p-phase coil winding unit 31 → a second p-phase coil winding unit 32 → said second feeding terminal q → a first q-phase coil winding unit 33 → said second q-phase coil winding unit 34 → said third feeding terminal r → a first r-phase coil winding unit 35 → said second r-phase coil winding unit 36.” See c.3:26-39. The series coil arrangement of each phase provides a high output torque (c.7:40-47).

It would have been obvious to provide series coils per Takehara in each phase in the dual-layer arrangement of the prior art of Takehara since the series coils would have provided a high output torque.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Stephens (US 4,967,464) teaches an electromagnetic motor adopting a delta-connection structure (Fig.2a) which includes an u-phase coil winding unit 118, a v-phase coil winding unit 118 and a w-phase coil winding unit 118 radially extending from “a stator fixed to a rotating shaft” [sic] (i.e., stator 112 is fixed and rotor 132/134 rotates, Fig.1) and set with a phase difference relative to one another (c.5:25-40) and a first feeding terminal A, a second feeding terminal B and a third feeding terminal C (Fig.2a) through which a predetermined current is supplied to coils at the individual phases (c.5:25-40), wherein said coils 118 are wound through a sequence (i.e., continuously wound per c.4:64-66); said first feeding terminal A → u-phase coil winding unit 118 → said second feeding terminal B → v-phase coil winding unit 118 → said third feeding terminal C → said w-phase coil winding unit 118.

Horst et al. (US 6,717,314) teaches an electromagnetic motor adopting a delta-connection structure (Fig.2B; c.4:19-21) which includes an [A/u]-phase coil winding unit, a [B/v]-phase coil winding unit and a [C/w]-phase coil winding unit radially extending from “a stator fixed to a rotating shaft” [sic] (i.e., stator 2 is fixed and rotor 3 rotates) and set with a phase difference relative to one another (inherent to A-B-C phases) and a first feeding terminal ‘a’ (Fig.2B), a second feeding terminal ‘b’ (Fig.2B) and a third feeding terminal ‘c’ (Fig.2B) through which a predetermined current is supplied to coils at the individual phases (c.4:21-c.5:&7), wherein said coils are wound through a sequence; said first feeding terminal ‘a’ → [A/u]-phase coil winding unit → said second feeding terminal ‘b’ → [B/v]-phase coil winding unit → said third feeding terminal ‘c’ → said [C/w]-phase coil winding unit (Figs.2B&2D, with Fig.2D showing Y-

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connection, but when applied to the disclosed delta-connection, the first row or [A/u]-phase winding in Fig.2D begins at terminal 'a' and ends at terminal 'b', the second row or [B/v]-phase winding begins at terminal 'b' and ends at terminal 'c', and the third row or [C/w]-phase winding begins at terminal 'c' and ends at terminal 'a' to complete the delta-connection sequence of series-connected coils).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BURTON MULLINS whose telephone number is (571)272-2029. The examiner can normally be reached on 9-5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Qyeng Leung can be reached on (571)272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BURTON MULLINS/
Primary Examiner, Art Unit 2834

bsm
10 November 2008